5 # ABSTRACT

A complete User Datagram Protocol (CUDP) is disclosed that reduces packet loss. Channel frame error information is used with a packet level forward error correction (FEC) coding technique to accommodate wireless multimedia traffic. Each packet, as well as the

10 channel frame error information, is forwarded to a given application. The CUDP protocol further assists the FEC decoding process by forwarding the locations of corrupted frames to the FEC decoder. Maximal Distance Separable (MDS) codes can be applied to a group of packets, to achieve additional robustness. An MDS decoder utilizes the frame error information to recognize the erasures within each packet. The error information can be represented as a set of

15 LTU error indicators associated with each packet (for FEC decoders requiring an erasure indicator). The error indicators point to the starting and ending location of the erroneous data. The error information can also be represented as a reformatted packet (for FEC decoders Recognizing Erasures). The frame (LTU) error information from the lower layers is incorporated in the packet payload. An FEC encoder is also disclosed that encodes multimedia packets

20 utilizing a packet-coding scheme, such as a Vertical Packet Coding (VPC) scheme or a Long Vertical Packet Coding (LVPC) scheme.

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